Solaris 7 Maintenance Update 1 Release Notes (Intel Platform Edition)

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Contents

CHAPTER 1

Introduction

The *Solaris 7 Maintenance Update 1 Release Notes* explains how to install the Solaris™ 7 Maintenance Update™ 1 (MU1) software, a set of patches that have been tested together and packaged for one-step installation. These Release Notes are for system administrators installing the MU1 software. If you need more information on general procedures for system administration, refer to the *System Administration Guide.*

The Solaris 7 MU1 applies to all systems running Solaris 7 software and to all Solaris 7 locales. The installation automatically updates previously installed patches without regressing any post-Solaris 7 patches you have on your system.

Maintenance updates are primarily designed to update the Solaris operating software to a known, tested patch-level. If you want to apply a particular patch, and only that patch, you should do so through your normal support channels.

The Solaris 7 MU1 contains bug fixes and performance improvements to existing driver support. If you intend to upgrade your hardware, use the Solaris 7 3/99 CD for additional hardware support.

Note - The name of this product is Solaris 7 MU1 but code and path or package path names may use Solaris 2.7 or SunOS 5.7. Always follow the code or path as it is written.

The Solaris 7 MU1 installation procedure takes much less time than it takes to install the MU1 patches individually. The Solaris 7 MU1 installation time varies depending on:

- CPU speed of your machine
- `install_mu` option you select
- Transfer speed of the CD-ROM drive, hard drive, or network you use to access the `install_mu` code and patch set

If you install the MU1 with the backout option disabled, installation will proceed more quickly. However, you will not be able to back out any of the patches MU1 delivers.

If you are performing an initial installation and want to make `install_mu` run slightly faster, use the –u option, which skips the validation step of `install_mu`. The validation step verifies that the files to be updated were not changed since the initial installation.

CHAPTER 2

Installing the Solaris 7 Maintenance Update

This chapter describes how to install your Solaris 7 MU1 software on a standalone system or on a diskless client or Solstice™ AutoClient™ from a server. If you want to install the Solaris 7 MU1 software as part of a customized JumpStart™ (automatic installation) process, refer to the *Solaris Advanced Installation Guide.*

Requirements

Space requirements per file system vary depending on:

- Whether you select the back out option
- The location of the back out directory when saving backout data
- The disk partitions and the space available in each file system versus the patch disk space needed per file system
- Your system's locale
- Whether some of the Maintenance Update patches are already installed on your system
- Whether you are patching a client, a server, or a service area

The `install_mu` script performs a space analysis for you and reports the space needed per file system, including back out space if applicable. The space calculations take several minutes.

The `install_mu` script does not proceed if it determines that space is lacking in one or more file systems. Although the patch installation space needed is calculated fairly

precisely, the back out data space need is estimated and the reported need may be higher than the actual need.

- If you are certain that you have enough space to apply the patch set (and back out data if desired) and wish to bypass the space calculation, run `install_mu` with the `–f` option.
- If you would like to have `install_mu` report on your disk space availability and need without applying any patches, run `install_mu` with the `–D` option.

Note - The MU may only be installed on a system running the Solaris 7 operating environment. In a client/server environment, the MU can only be applied to a client if both the client and server are running the Solaris 7 operating environment.

Installing Maintenance Update 1

Solaris 7 MU1 software can only be installed if both the system running `install_mu` and the target systems are already running Solaris 7.

It is best to reboot your system in single-user mode before installing MU1 because MU1 patches system libraries. On a multi-user system, your system will be unstable if any processes have mapped to an unpatched version of a library and later attempt to map to different sections of the old library.

In single-user mode, network services are not available. If the MU1 image is on the network rather than on a CD, you must copy the MU1 image from the network to your local system before booting your system in single-user mode.

If it is not possible to reboot the system in single-user mode or if you do not have enough disk space to make a local copy of the MU1 image, you will need to install MU1 using NFS™ in multi-user mode. In this case, you should have the system in as quiet a state as possible, without users logged or running jobs.

Note - Be sure that you have backed up your system's operating system before proceeding.

To install the Solaris 7 MU1 software:

1. **Make sure that no important user or system processes are running.**

2. **Exit the current session.**

   The CDE login screen appears.

3. **Click the Options button and select Command Line Login.**

   The system prompts you to login.

4. **Type your login name as `root` and enter the root password:**

```
login: root
password: root password
```

5. **Reboot in single-user mode. From the root shell prompt, type:**

```
# reboot -- -s
```

Note - Changing the run level from multi-user mode to single-user mode with the `shutdown` or `init` command might leave the `vold` process running. This may cause problems mounting the MU1 CD in single-user mode.

---

6. **Enter the root password.**

   Check that the system displays the following message and is now in system maintenance mode.

```
Entering System Maintenance Mode

Sun Microsystems Inc. SunOS 5.7 Generic October 1998
#
```

- If you are running `install_mu` from the CD, go to Step 7.
- If you are running `install_mu` from a local copy of the MU1 image, go to Step 8.

7. **To mount the MU1 CD, place the CD in the drive and from the root shell prompt, type:**

```
# mount -o ro -F hsfs /dev/dsk/c0t6d0s0 /cdrom
```

Note - In some cases, the CD-ROM drive may be on a different controller than `c0` or a different target than `t6`, which would require a different path to the CD-ROM device. Check with your system administrator if you have questions about mounting the CD-ROM drive.

---

8. Run `install_mu`.

- From a local copy of the MU1 image, type:

```
# cd local_directory
# ./install_mu any desired options
```

- From the MU1 CD, type:

```
# cd /cdrom
# ./install_mu any desired options
```

The following options can be used on the command line.

TABLE 2–1 Command Line Options for `install_mu`

Option	Description
`–u`	Unconditional install; does not verify that files to be updated were not changed since the initial installation.
`–d`	Specifies that patches will not be backed up. Using this argument decreases the time it takes to install the software, but it also prevents you from backing out individual patches. Cannot be specified with `–B` option.
`–p` *patchdir*	Specifies directory that includes all the patches.
`–q`	Disables the display of dots that indicate `install_mu` activity.
`–B` *backoutdir*	Specifies that the back out data is saved in the indicated directory. Cannot be specified with the `–d` option.
`–f`	Force installation of patch set without checking for sufficient disk space. Using this option saves time, but you should only use it if you are certain that you have enough space. Cannot be specified with the `–D` option.

TABLE 2–1 Command Line Options for `install_mu` *(continued)*

Option	Description
–D	Dry run mode; reports the amount of needed disk space without applying patches. Cannot be specified with –f option.
–R *rootdir*	Specifies an alternate root directory. Use to apply MU1 to clients whose package system information files are located in a directory tree starting in the specified *rootdir*. Cannot be specified with the –S option.
–S *servicedir*	Specifies an alternate service directory. Use to apply MU1 to a service area for clients of a different operating system or architecture than the server. Cannot be specified with the –R option.

When the installation is complete, the following message is displayed:

```
install_mu completed successfully.
```

- If you see this message, go to Steps 9 and 10 to complete the installation.
- If you encounter any errors, go to Step 11.

9. Reboot the system by typing:

```
# sync ; reboot
```

You are then prompted for a login.

Note - It is very important that you reboot your system after installing MU1 to prevent the library conflict problem.

10. Type your login name and password:

```
login: login
password: password
```

11. If you encounter errors, check the detail log file for error information.

Errors encountered during patch installation are displayed after installation is complete. Check the detail log file for additional information about any patches or packages that were not installed.

```
# more \
$rootdir/var/sadm/install_data/Maintenance_Update_log.mu_version_name.date_time
```

where:

- *$rootdir* is the root directory of the system that you have just updated; for example, / for the local system and /export/root/*clientname* for a diskless client.
- *mu_version_name* is the name of the MU (it is Solaris_7MU1 for MU1).
- *date_time* is the designated date and time copied from date +%y%m%d%H%M%S (*yyyymmddHHMMSS* or *year-month-day-hour-minute-second*).

Note - *$rootdir*/var/sadm/install_data/Maintenance_Update_log is a symbolic link to the most recent MU log file.

For explanations and recommended actions for error codes, see Appendix A.

Backing Out

The patches in the Solaris 7 MU1 software have been tested together as a set and, for the greatest stability, should be used that way. If you need to remove one of the patches, you may do so provided that you did not use the –d option of install_mu during the installation of the Solaris 7 MU1 software.

Instructions for backing out individual patches are located in each patch directory. Patch directories are located in *$rootdir*/var/sadm/patch/.

Note - Backing out the entire MU is not possible if you selected the –d option of install_mu.

It is best to reboot your system in single-user mode before backing out the MU1. MU1 patches system libraries. On a multi-user system, your system will be unstable

if any processes have mapped to a patched version of a library and later attempt to map to different sections of the old library.

In single-user mode, network services are not available. If the MU1 image is on the network rather than on a CD, you must copy the MU1 image from the network to your local system before booting your system in single-user mode.

If it is not possible to reboot the system in single-user mode or if you do not have enough disk space to make a local copy of the MU1 image, you will need to back out MU1 using NFS in multi-user mode. In this case, you should have the system in as quiet a state as possible without users logged on or running jobs.

The `backout_mu` script provided by MU1 enables you to back out an entire MU. To back out the Solaris 7 MU1 software:

1. **Make sure that no important user or system processes are running.**

2. **Exit the current session.**

   The CDE login screen appears.

3. **Click the Options button and select Command Line Login.**

   The system prompts you to login.

4. **Type your login name as `root` and enter the root password:**

```
login: root
password: root password
```

5. **Reboot in single-user mode. From the root shell prompt, type:**

```
# reboot -- -s
```

Note - Changing the run level from multi-user mode to single-user mode with the `shutdown` or `init` command might leave the `vold` process running. This may cause problems mounting the MU1 CD in single-user mode.

---

6. **Enter the root password.**

   Check that the system displays the following message and is now in system maintenance mode.

```
Entering System Maintenance Mode

Sun Microsystems Inc. SunOS 5.7 Generic October 1998
#
```

- If you are running `backout_mu` from the CD, go to Step 7.
- If you are running `backout_mu` from a local copy of the MU1 image, go to Step 8.

7. To mount the MU1 CD, place the CD in the drive and from the root shell prompt, type:

```
# mount -o ro -F hsfs /dev/dsk/c0t6d0s0 /cdrom
```

Note - In some cases, the CD-ROM drive may be on a different controller than `c0` or a different target than `t6`, which would require a different path to the CD-ROM device. Check with your system administrator if you have questions about mounting the CD-ROM drive.

---

8. Run `backout_mu`.

- From a local copy of the MU1 image, type:

```
# cd local_directory
# ./backout_mu any desired options
```

- From the MU1 CD, type:

```
# cd /cdrom
# ./backout_mu any desired options
```

TABLE 2–2 Command Line Options for `backout_mu`

Option	Description
–T *tooldir*	Specifies the location of the patch tools directory.
–q	Disables the display of dots that indicate `install_mu` activity.
–B *backoutdir*	Specifies an alternate directory in which patches have been saved.
–R *rootdir*	Specifies an alternate root directory.
–S *servicedir*	Specifies an alternate service directory.

When the back out is complete, the following message is displayed:

```
backout_mu completed successfully.
```

- If you see this message, go to Steps 9 and 10 to complete the back out.
- If you encounter any errors, go to Step 11.

9. Reboot the system by typing:

```
# sync ; reboot
```

You are then prompted for a login.

Note - It is very important that you reboot your system after backing out MU1 to prevent the library conflict problem.

10. Type your login name and password:

```
login: login
password: password
```

11. If you encounter errors, check the detail log file for error information.

Errors encountered during patch back out are displayed after back out has been completed. Check the detail log file for additional information about any patches or packages that were not backed out.

```
# more \
$rootdir/var/sadm/install_data/MU_Backout_log.mu_version_name.date_time
```

where:

- *$rootdir* is the root directory of the system that you have just updated; for example, / for the local system and /export/root/*clientname* for a diskless client.
- *mu_version_name* is the name of the MU (it is Solaris_7MU1 for MU1).
- *date_time* is the designated date and time copied from date +%y%m%d%H%M%S (i.e., *yyyymmddHHMMSS* or *year-month-day-hour-minute-second*).

Note - *$rootdir*/var/sadm/install_data/Maintenance_Backout_log is a symbolic link to the most recent MU log file.

For explanations and recommended actions for error codes, see Appendix A.

Installing on a Diskless Client or Solstice AutoClient from a Server

You can install the Solaris 7 MU1 software on a diskless client or Solstice AutoClient from a server that is in multiuser mode. However, you cannot run install_mu

before you add a client. Refer to *Solaris 7 Installation Library* for details on using Solstice™ AdminSuite™.

You need to decide whether to use `admclientpatch` or `install_mu` to install the Solaris 7 MU1 software in a client/server environment. Use the following table and discussion to decide which method to use:

TABLE 2–3 Differences between `admclientpatch` and `install_mu`

	`admclientpatch`	`install_mu`
Patching speed	Slower	Faster
Service area handling	Automatic	Manual
Ease of patching	More involved	Simple
Integration with AdminSuite	Complete	None

`admclientpatch` is an AdminSuite utility that manages the installation and removal of a collection of patches on a set of managed clients. Applying the MU patch set via `install_mu` bypasses AdminSuite's patch management process and makes it more difficult later to manage the patch set shared by multiple clients. This is a concern if the number of clients is large or if patches other than those in the MU set are installed or removed.

`admclientpatch` automatically patches client service areas. With `install_mu`, each client needs to be patched with the `–R` option, then `install_mu` must be executed with the `–S` option for each service area. If there are multiple clients that share a single service area, you only need to run `install_mu` once with the `–S` option. This procedure ensures that both the service area and root area of a client remain consistent.

`install_mu` patches clients more quickly because it bypasses the `admclientpatch` patch management process and because `admclientpatch` removes older revisions of patches before applying newer ones. In environments with few clients and service areas, `install_mu` may be a good way to patch clients and service areas.

`install_mu` may be easier to use because it recognizes the MU set of patches. The MU distribution patch directory contains a file (`.order`) that lists all of the patches it will apply in the correct order, considering patch requirements. To patch clients with `admclientpatch`, write a script that reads the `.order` file, applies the patches to the `admclientpatch` spool area, and then invokes `admclientpatch` to install the patches to the clients. Run `install_mu` with the `–D` (dry run) option to identify the location of the `.order` file.

For more information about managing clients and patches, see the *Solstice AutoClient 2.1 Administration Guide* at `http://docs.sun.com`

Note - `install_mu` supports installations on servers with both homogeneous and heterogeneous server/client root paths. It also supports installing on a server's service area for either heterogeneous or homogeneous clients.

Installing With `install_mu`

To install the Solaris 7 MU1 software on a diskless client or AutoClient from a server using `install_mu`:

1. **Halt the diskless client or AutoClient.**

2. **On the server, run the `install_mu` script located in the local product directory, with the client's root directory as the argument.**
   - From a local copy of the MU1 image that corresponds to the client platform, type:

```
# cd local_directory
# ./install_mu -R /export/root/client_name
```

     where *client_name* is the hostname of the diskless client or AutoClient.
   - From the MU1 CD, mount the CD and type:

```
# cd /cdrom/S7_maintenance_update_1_x86
# ./install_mu -R /export/root/client_name
```

     where *client_name* is the hostname of the diskless client or AutoClient.

3. **Repeat this process for each diskless client or AutoClient being served.**

4. **Install the Solaris 7 MU1 software on the server's service area. From a local copy of the MU1 image that corresponds to the server platform, type**:

```
# cd local_directory
# ./install_mu -S Solaris_2.7
```

5. **Boot the diskless client or AutoClient.**

Backing Out With `backout_mu`

To back out the Solaris 7 MU1 software on a diskless client or AutoClient from a server using `backout_mu`:

1. **Halt the diskless client or AutoClient.**

2. **On the server, run the `backout_mu` script located in the local product directory, with the client's root directory as the argument.**
   - From a local copy of the MU1 image that corresponds to the client platform, type:

```
# cd local_directory
# ./backout_mu -R /export/root/client_name
```

     where *client_name* is the hostname of the diskless client or AutoClient.
   - From the MU1 CD, mount the CD and type:

```
# cd /cdrom/S7_maintenance_update_1_x86
# ./backout_mu -R /export/root/client_name
```

     where *client_name* is the hostname of the diskless client or AutoClient.

3. **Repeat this process for each diskless client or AutoClient being served.**

4. **Back out the Solaris 7 MU1 software on the server's service area. From a local copy of the MU1 image that corresponds to the server platform, type:**

```
# cd local_directory
./backout_mu -S Solaris_2.7
```

5. Boot the diskless client or AutoClient.

Identifying the Version of Your Solaris 7 Maintenance Update

To identify the version of your Solaris 7 MU software, type:

```
# cat /etc/release
```

APPENDIX **A**

Error Messages

The screen messages displayed during the execution of `install_mu` and `backout_mu` do not include all errors that may have occurred. Therefore, verify the results of the installation by looking at the `Maintenance_Update_log` or `Maintenance_Backout_log` file in the `/var/sadm/install_data` directory. Messages recorded in this log file reflect the installation or back out status of each patch and package. Some error message examples follow.

Note - You will see only the error text when the message appears, not the error code number included here. The error code numbers are included here in case you are writing a script that calls the `install_mu` or `backout_mu` and your script needs to know the return values for the failure conditions.

Error Code 1

```
signal detected.

install_mu (backout_mu) is terminating.
```

Explanation and recommended action: You interrupted `install_mu` (or `backout_mu`) by pressing `Control-C`. Reinvoke the program. If you reinvoke `install_mu`, error messages about previously applied patches will appear in the log file. Ignore the error messages.

Error Code 2:

```
install_mu (backout_mu) is unable to find the INST_RELEASE file
for the target file system. This file must be present for
install_mu (backout_mu) to function correctly.
```

Explanation and recommended action: The program cannot find the file `/var/sadm/system/admin/INST_RELEASE` in the client's root area. The client

was not created properly or has become corrupted. Back up the client, then remove and recreate it.

Error Code 3:

```
ERROR: Cannot find $xcommand which is required for proper
execution of install_mu (backout_mu).
```

Explanation and recommended action: `install_mu` and `backout_mu` require a number of system utilities (for example `awk, sed, grep`) to be present in the server's `/usr/bin` and `/usr/sbin` directories. One of these utilities is missing. Contact your system administrator for assistance.

Error Code 4:

```
The -B and -d arguments are mutually exclusive.
```

Explanation and recommended action: The –`d` option requests that no backout data be saved. The –`B` option specifies a directory to store backout data. These two options cannot be used together. Reinvoke `install_mu` with only one of these options.

Error Code 5:

```
The -p parameter must be a directory. $uPATCHDIR is not a
directory.
```

Explanation and recommended action: You selected the –`p` option and supplied a path that is not a valid directory. Reinvoke `install_mu` (or `backout_mu`) with a valid path to the –`p` option.

Error Code 6:

```
The -B parameter must be a directory. $1 is not a directory.
```

Explanation and recommended action: You supplied an option to –`B` that is not a directory. Reinvoke `install_mu` (or `backout_mu`) with a valid path to the –`B` option.

Error Code 7:

```
Permissions on backout directory $BACKOUTDIR not adequate.
```

Explanation and recommended action: You supplied an option to –`B` that is not a writable directory. Contact your system administrator for assistance.

Error Code 8:

```
The -R parameter must be a directory. $ROOTDIR is not a
directory.
```

Explanation and recommended action: You supplied an option to –R that is not a directory. Reinvoke `install_mu` (or `backout_mu`) with a valid path for the –R option.

Error Code 9:

`The -S parameter must be a directory. /export/`*`$1`* `is not a directory.`

Explanation and recommended action: `install_mu` and `backout_mu` look in `/export` for the service area you supply to the –S option. Currently "Solaris_2.7" is the only valid option to –S. The `/export/Solaris_2.7` directory must exist. If it does not, then the service area does not exist. Contact your system administrator for assistance.

Error Code 10:

`Invalid option.`

Explanation and recommended action: You selected an unrecognized option. Read the usage message displayed and reinvoke `install_mu` (or `backout_mu`).

Error Code 11:

`Can't write to Log File:` *`$LOGFILE`*

Explanation and recommended action: `install_mu` and `backout_mu` need to write its log into the *$ROOTDIR*`/var/sadm/install_data` directory, where *$ROOTDIR* specifies the root directory of your client or server. Check that the `install_data` directory is writable, then reinvoke `install_mu` (or `backout_mu`).

Error Code 12:

`SUNWcar (core architecture root) package does not exist in` *`$ROOTDIR`*`/var/sadm/pkg.`

Explanation and recommended action: The `/var/sadm/pkg/SUNWcar` directory is missing in the client or server's root area. Your client or server has become corrupted. Contact your system administrator for assistance.

Error Code 13:

`install_mu (backout_mu) only supports sparc and i386 architectures. install_mu (backout_mu) has detected ARCH=`*`$LPROC`*`.`

Explanation and recommended action: You ran `install_mu` (or `backout_mu`) on a system whose architecture is not SPARC or i386. Reinvoke `install_mu` (or `backout_mu`) on a supported platform.

Error Code 14:

`-p parameter does not point to a directory containing a .order file. Looked in *$uPATCHDIR* and in *$uPATCHDIR/$MU_TOP/$LPROC/*Patches.`

Explanation and recommended action: You provided a path to a patch directory but `install_mu` could not find a `.order` file in that directory, which it needs to determine the correct patch installation order. `install_mu` (or `backout_mu`) looked in *$path_you_specified* and in *$path_you_specified*`/MU/`*$arch*`/Patches`, where *$arch* is either "sparc" or "i386." Check for the existence of a `.order` file and reinvoke `install_mu` (or `backout_mu`).

Error Code 15:

`install_mu cannot locate patch order (.order) file. Paths searched: ./`*$LPROC*`/Patches, `*$MU_TOP/$LPROC*`/Patches, /cdrom/cdrom0/`*$LPROC*`/Patches ./`*$uPATCHDIR*`, and ./`*$uPATCHDIR/$MU_TOP/$LPROC*`/Patches.`

Explanation and recommended action: You did not supply `install_mu` (or `backout_mu`) with the `–p` option to identify the patch directory and `install_mu` (or `backout_mu`) could not locate the patch directory. Reinvoke `install_mu` (or `backout_mu`) with the `–p` option.

Error Code 16:

`You must be root to execute this script.`

Explanation and recommended action: You need root privileges to run `install_mu` or `backout_mu` since only user root can apply and remove patches. Reinvoke the program as root.

Error Code 17:

`install_mu (backout_mu) can only patch version 2.7 systems. Target system is version *$TrgOSVers*.`

Explanation and recommended action: You asked `install_mu` to apply patches to a server or client not running Solaris 7, or you asked `backout_mu` to back out patches from a server or client not running Solaris 7; `install_mu` and `backout_mu` must be run on a Solaris 7 system.

Error Code 18:

`Directory with patch tools, *$TOOLSDIR*, not found.`

Explanation and recommended action: `install_mu` (or `backout_mu`) cannot find the Tools directory distributed with the Maintenance Update. If you copied the Maintenance Update distribution to your system, then the copy has probably become corrupted or modified. Reinstall the Maintenance Update distribution.

Error Code 19:

$TOOLSDIR/patchadd (or patchrm) does not exist or is not executable.

Explanation and recommended action: The Maintenance Update distribution comes with its own versions of patchadd and patchrm. One of these is missing or is not executable. If you copied the Maintenance Update distribution to your system, then the copy has probably become corrupted or modified. Reinstall the Maintenance Update distribution.

Error Code 20:

The service area must be Solaris_2.7.

Explanation and recommended action: The –S option supports Solaris 7 service areas. Reinvoke install_mu (or backout_mu) with a valid Solaris 7 service area and the argument "Solaris_2.7" to the –S option.

Error Code 21:

The -S and -R arguments are mutually exclusive.

Explanation and recommended action: If you are applying (or backing out) the Maintenance Update to a diskless client or AutoClient, then you need to invoke install_mu (or backout_mu) twice, once with the –R option to patch (or backout) the client's root area and again with the –S option to patch (or backout) the client's service area.

Error Code 22:

Not enough disk space to apply entire patch set.

Explanation and recommended action: install_mu analyzed your system and determined that there was not enough disk space on one or more file systems to install the entire patch set. Make disk space available in the deficient file systems reported and reinvoke install_mu. If you believe that you have enough disk space to apply the Maintenance Update, reinvoke install_mu with the –f option.

Error Code 23:

Not enough disk space to save patch backout data.

Explanation and recommended action: install_mu analyzed your system and determined that there was not enough disk space in the back out directory to save patch back out data. Select a back out directory with enough space, as is reported needed, then reinvoke install_mu. If you believe that you really have enough disk space in the back out directory reinvoke install_mu with the –f option.

Error Code 24:

Dry run disk space check failed.

Explanation and recommended action: `install_mu` invokes `pkgadd` with a special option to check for sufficient disk space. `pkgadd` failed, probably because `/` or `/var` is very low on disk space or because your system has become corrupted. Contact your system administrator for assistance.

Error Code 25:

`The -f and -D options are mutually exclusive.`

Explanation and recommended action: The –`f` option instructs `install_mu` to skip the dry run disk space calculation phase. The –`D` option requests that only the dry run calculations be made. Choose one option or the other, but not both.

Error Code 26:

`The` *`$service_area`* `service cannot be found on this system.`

Explanation and recommended action: `install_mu` expected to find the `/export/`*`$service_area`*`/var/sadm/pkg` directory, where *`$service_area`* is the argument to the –`S` option. The directory was not found. Check that you have a valid service area. Contact your system administrator for assistance.

Error Code 27:

`Cannot find state file. Looked for a file of the form` *`$ROOTDIR`*`/var/sadm/install_data/.mu_state. {`*`$root_or_usr`*`}.`

Explanation and recommended action: `backout_mu` requires a file containing a list of patches `install_mu` applied to know which patches to back out. If this file is missing, `backout_mu` cannot function. To remove the MU1 patch set, run the `backout_mu` program from the MU1 software distribution.

Error Code 28:

`The -T parameter must be a directory.` *`$uTOOLDIR`* `is not a directory.`

Explanation and recommended action: You supplied an option to –`T` that is not a directory. Reinvoke `backout_mu` with a valid path to the –`T` option.

Error Code 29:

`-T parameter does not point to a directory containing patching tools. Looked in` *`$uTOOLDIR`* `and in` *`$uTOOLDIR`*`/MU/common/Tools.`

Explanation and recommended action: `backout_mu` requires the tools `installpatch.fast` and `backoutpatch.fast`. These tools could not be found in the directory specified by the –`T` option. Reinvoke `backout_mu` with a valid path to the –`T` option.

Error Code 30:

```
backout_mu cannot locate tools directory. Paths searched: ./
common/Tools, MU/common/Tools, /cdrom/cdrom0/MU/common/Tools
```

Explanation and recommended action: `backout_mu` searched unsuccessfully in various directories for the patch tools `installpatch.fast` and `backoutpatch.fast`. Reinvoke `backout_mu` with the `–T` option and a path to these tools.

APPENDIX **B**

Known Problems

Known Problems in Solaris 7 MU1

This chapter describes known problems relating to the installation and use of the Solaris 7 MU1 software.

Installation Bugs

`install_mu` Does Not Function Correctly When Starting It Using `sh` 4108278

Because of problems regarding the interactions between `sh(1)` and `ksh(1)`, the `install_mu` utility may fail to install certain patches correctly whenever you start it using the following command from the command line or from an administrative script:

```
# /bin/sh ./install_mu arguments
```

Workaround: Execute `install_mu` from the command line or from an administrative script as follows:

```
# ./install_mu arguments
```

`install_mu` Leaves Files in the `/tmp` Directory 4108278

`install_mu` leaves files and working directories in `/tmp`. The files and directories could cause `/tmp` to become full, potentially leading to system problems. Files and directories left in `/tmp` are of the form `install*` and `SUNW*`.

Workaround: After `install_mu` has completed execution, check `/tmp` for files and directories named `install*` and `SUNW*`. If the files were created recently by root, remove them. Or, if the MU was applied to a stand alone machine or server, reboot the system.

`Patchadd` Displays an Error That It Is Terminating

One of the following benign messages may be displayed by `install_mu`:

```
One or more patch packages included in
XXXXXX-YY are not installed on this system.

Patchadd is terminating.
```

Or:

```
Installation of XXXXXX-YY failed:
  Attempting to patch a package that is not installed.
```

These messages indicate that `patchadd` could not find on your system any of the packages that it intended to patch, so it skipped the indicated patch.

The message is displayed when `patchadd` notices a discrepancy installing a patch of one architecture onto a system with a different architecture (for example, a sun4u patch on a sun4c system.)

This may also be the result of one or more packages being missing from the system. The package may have been removed by the administrator, or never installed, as in the case of installing a cluster smaller than the Entire Distribution. This is common with diskless clients and AutoClients.

Workaround: Ignore the message.

APPENDIX **C**

Solaris 7 Maintenance Update Contents

This chapter provides a patch list for the Intel platform.

For example, the following patch:

```
106542-01 : SunOS 5.7_x86: kernel update patch
 4139770 4170500 4174167 4179407
```

lists all parts of a patch where:

- `106542-01`: is the patch ID number
- `SunOS 5.7_x86: kernel update patch` is the synopsis patch description

`4139770 4170500 4174167 4179407` are the bug ID numbers fixed by `patch ID 106542-01`

Patch List

106542-02 : SunOS 5.7_x86 kernel update patch
4115711 4115715 4138467 4139770 4147402 4152055 4165983 4168739 4170410 4170500 4174167 4174331 4175558 4177496 4179407 4179883 4181570 4182043 4182047 4182227 4182234 4182240 4182970 4184015 4184430 4184852 4184877 4185366 4190083 4190138 4190405 4190796 4190807 4190812 4193467

106734-05 : SunOS 5.7_x86 Create a patch analyzer
4170691 4175875 4178977 4132282 4186583 4186586 4186587 4186588

106794-01 : SunOS 5.7_x86 ufsdump and ufsrestore patch
4077276 4132365 4145883 4169853 4184189

106821-03 : SunOS 5.7_x86 ctl print utility patch

(continued)

4172142 4173334

106833-02 : SunOS 5.7_x86 auditreduce/c2audit/praudit patch
4166626 4167174 4168892 4172111 4172702 4174308 4182072 4187811

106852-04 : SunOS 5.7_x86 Manual Pages for Solaris 7 update
4173822 4186746 1070678 4136939 4153439 4162004 4171658 4170933 4169829 4146611
4147612 4165502 4166848 4178133 4179296 4181039 4181145

106914-03 : SunOS 5.7_x86 boot.bin, mmu36 and rootnex patch
4122009 4163335 4170602 4194509

106916-01 : SunOS 5.7_x86 dtmail in zh.GBK can't read 2.5.1 Chinese email.
4182320

106918-01 : SunOS 5.7_x86 when view mails change charset, dtmail dump core.
4175029

106927-02 : SunOS 5.7_x86 sdtudctool, sdtudc_register and sdtudc_extract patch
4178971 4183926 4178952 4178964 4162315 4176705 4179808 4192450

106928-01 : OpenWindows 3.6.1 (japanese) OW ws menu bug for _x86
4177882

106935-01 : CDE 1.3_x86 libDtSvc Patch
4181281 4167347

106937-01 : SunOS 5.7_x86 /etc/cron.d/logchecker patch
4094591

106939-01 : SunOS 5.7_x86 libresolv patch
4134616

106941-01 : SunOS 5.7_x86 /usr/sbin/makedbm patch
4144726

106943-01 : SunOS 5.7_x86 libnsl patch
4157559 4161969

106945-01 : SunOS 5.7_x86 /kernel/fs/fifofs patch
4166116

106947-01 : SunOS 5.7_x86 /usr/sbin/sar patch
4175435

106951-01 : SunOS 5.7_x86 linker patch
4176579 4176796

106953-01 : SunOS 5.7_x86 /usr/bin/uux patch
4179980

106961-01 : SunOS 5.7_x86 Manual Pages for patchadd.1m and patchrm.1m
4178212

(continued)

106968-01 : SunOS 5.7_x86 htt server unexpectedly restart
4172429

106970-01 : SunOS 5.7_x86 zh.GBK, Input Method, Alt+1 sometimes work improperly
4183054

106972-02 : SunOS 5.7_x86 xetops of zh.GBK locale doesn't process TAB character
4187748

106979-01 : SunOS 5.7_x86 fix for /var/log/sysidconfig.log permission
4166260

106981-03 : SunOS 5.7_x86 libthread patch
4157739 4173285 4173422

106986-01 : SunOS 5.7_x86 /usr/sbin/uadmin and /sbin/uadmin patch
4167438

106988-01 : SunOS 5.7_x86 /usr/sbin/tar and /usr/sbin/static/tar patch
4159872

107002-01 : CDE 1.3_x86 Actions patch
4157154

107012-01 : CDE 1.3_x86 sdtwebclient patch
4110777 4164680 4185288

107015-01 : SunOS 5.7_x86 sd bug fixes.
4170911 4165914

107016-01 : SunOS 5.7_x86 NCR pcplusmp patch
4181438

107017-01 : SunOS 5.7_x86 SPWR Patch
4155766 4183567

107019-01 : SunOS 5.7_x86 /usr/sbin/in.named patch
4134616

107023-01 : CDE 1.3_x86 sdtcm_convert patch
4184188

107025-01 : SunOS 5.7_x86 ata bug fixes.
4183194

107032-01 : SunOS 5.7_x86 /usr/ucb/ucblinks patch
4161576

107039-01 : SunOS 5.7_x86 apropos/catman/man/whatis patch
4107178 4154565

107043-01 : SunOS 5.7_x86 Messages of Patch Analysis update for install

(continued)

107045-01 : SunOS 5.7_x86 Russian and Polish print failure on some printers
4190105

107060-01 : SunOS 5.7_x86 /usr/bin/sort and /usr/xpg4/bin/sort patch
4181185

107073-01 : CDE 1.3_x86 Spell Checker patch
4185079

107075-01 : SunOS 5.7_x86 SUNWultratest doesn't support sun4us platform
4190729

107077-01 : SunOS 5.7_x86 /usr/kernel/drv/vol patch
4181968

107082-01 : Motif 1.2.7_x86 Runtime library patch
4159034 4149711 4171291 4170491 4162369 4165677 4171723 4174322 4183749 4186734
4186826

107095-01 : CDE 1.3_x86 dtterm libDtTerm.so.2 Patch
4177487

107118-01 : SunOS 5.7_x86 libbsm patch
4188193

107120-01 : SunOS 5.7_x86 JFP manpages patch
4185342 4190255 4195644

107125-01 : SunOS 5.7_x86 JFP message files patch
4195663

107128-01 : SunOS 5.7_x86 /usr/lib/autofs/automountd patch
4188020

107129-01 : SunOS 5.7_x86 /usr/sbin/i86/sysdef patch
4187740

107149-01 : SunOS 5.7_x86 /kernel/fs/cachefs patch
4170190

107172-01 : SunOS 5.7_x86 Fixes for patchadd and patchrm
4186941 4176890 4190866 4150762 4193454 4194281 4194308

107179-01 : CDE 1.3_x86 libDtHelp.so.1 patch
4193245

107188-02 : SunOS 5.7_x86 Miscellaneous Eastern European locale problems
4174452 4179411 4138017

107210-01 : Solaris 7_x86 Add/Change some messages from s399

(continued)

(Continuation)